

CLCS CSCI Integration Tag-up

June 6, 1997



CLCS

Agenda

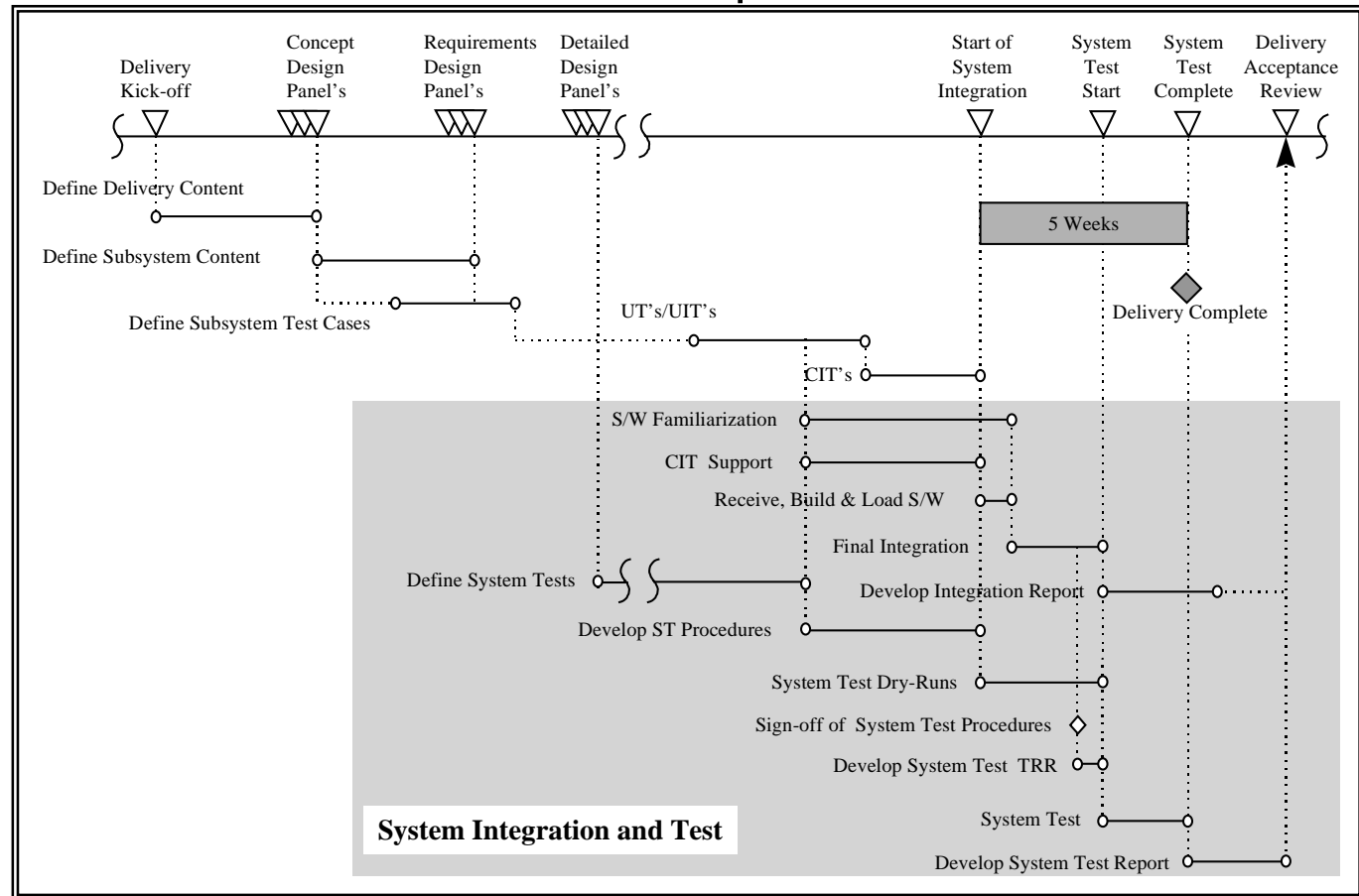
- ❑ Introduction
- ❑ Deliverables
- ❑ Roles and Responsibilities
- ❑ CIT Schedule
- ❑ CSCI Coordination



Introduction

- ❑ Some lessons learned from the Juno delivery, plus the aggressive Redstone schedule indicate that better coordination between System Integration and Test and the CSCI leads is required

- ❑ This schedule template is planned to be used for each CLCS delivery



Documentation Deliverables

- ❑ The following types of documentation will be required in future CLCS deliveries (starting with Redstone):
 - Operating procedures (e.g., installation, configuration, initialization)
 - Users' guides (procedures generally performed by the end user as opposed to system operations personnel)
 - CSCI/HWCI test histories and test procedures (as run)
 - A Requirements Verification Matrix (for each delivery) which maps functional level test cases to functional level requirements as well as functional level requirements to System Level Specification requirements.
 - Known error conditions (and associated work arounds)
 - Operational dependencies such as:
 - System configuration requirements for CSCI's and HWCI's
 - Data requirements
 - Required interfaces (internal and external)
- ❑ These deliverables must be given to System Integration and Test prior to the start of formal system integration (at the end of CIT's)



Requirements Traceability

- ❑ This table will be updated and baselined with each System Test starting with the Redstone Delivery System Test.

SLS Requirement #	System Test	Test Case	Associated Threads	Method			
				Inspection	Analysis	Demonstration	Test
2.1.1.2.1	Redstone 84K6501	3.6	Data Distribution, Reliable Messaging Phase 2			✓	

- ❑ This table will be included in any CSCI test (UT, UIT or CIT) in which Functional Requirements are being formally verified

CI Name							
Functional Requirement #	Traced SLS Requirement(s)	CI Test	Test Case	Method			
				Inspection	Analysis	Demonstration	Test
3.2.1	2.1.1.2.1, 2.2.2.1.3	Redstone CIT	1			✓	
3.2.2	2.1.1.2.1	Thor UIT	3				✓



Methods

☐ Inspection

- A method used to determine system characteristics by examining engineering drawings, flow diagrams, and computer program listings, manuals or Certificates of Compliance during the development phase to verify conformance with specified requirements.

☐ Analysis

- Analysis may be used for determining performance of an item and its qualitative or quantitative properties.
 - This may be accomplished through studies, calculations, and modeling.
 - Similarity analysis may be used when it can be shown that an item is similar or identical in design to another item that has been previously certified to equivalent or more stringent criteria.



Methods (cont'd)

☐ Test

- A method used to verify conformance of functional characteristics with specified requirements.
- This is generally a quantitative test, e.g., does a function complete within the required time limits, does the software calculation give the correct answer, etc.

☐ Demonstration

- A variation of the test method that is used to verify conformance with specified requirements by go/no go criteria
- This is generally a qualitative test, e.g., does the software issue a command when its supposed to, is the display updated correctly, etc.



System Integration Responsibilities

❑ CSCI Level

- Review subsystem level design documentation
 - IDD's, APIs, Requirements, Detail Design
- Attend CSCI & delivery meetings
 - Design Panels, Delivery Manager meeting
- CIT activities
 - Assist in development of CIT Test Procedures template
 - Review & comment on CIT Test Procedures
 - Verify H/W & S/W configuration in IDE prior to CIT
 - Attendance at execution of CIT
 - Assistance in execution of CIT as required
- Monitor dependencies identified on CSCI schedules
- Maintain detailed delivery integration schedule
 - based on CSCI schedules



System Integration Responsibilities

☐ System Level

- Promotion of software across environments
- Participation in Issue Screening Panel
- Assistance to CM/Build group as necessary
 - CM activities
 - Build & Promotion of SCID & TCID baselines
- Provide direct support to Delivery Manager
- Maintain System Integration & Test schedule
- Support to System Test
 - Development of System Test Procedures
 - Dry-run & checkout of procedures
 - Formal System Test
- Review & comment of project level documentation
 - SLS, SDD, SDP, CM Plan



Redstone CIT Schedule

☐ Description

- CIT start dates range from 7/14/97 to 8/20/97
- CIT end dates range from 8/26/97 to 8/29/97
- IDE available for CIT activities 6/30/97
- CIT Dry Runs start 07/97

☐ Problems

- Using the current schedule, at least 12 CIT's will be executing at the same time
 - 8/20/97 to 8/26/97
- There are currently only 1-2 QA representatives available to support CIT's
- There are only 3 System Integration personnel available to support CIT's
- Certain CIT's need to be completed before others can start (examples:)
 - Gateway complete before Data Distribution
 - Data Distribution complete before System Viewers
- Limited IDE resources: ?? HCI, 1 DDP, 2 CCP, 1 G/W



Redstone CIT Schedule

☐ Proposed Resolution

- CIT dates need to be staggered
 - Provide access to IDE resources
 - Provide QA & System Integration support
 - CIT dependencies satisfied (Who's on first)
- CSCI schedules need to be modified for new CIT dates
- CSCI leads need to identify IDE resource dependencies for CIT
 - HCI / DDP / CCP / Gateway



CSCI Coordination

☐ Dependencies

- Types of dependencies
 - Interfaces (API), Configuration (H/W, S/W), Data Products
- Items required by the CSCI which are produced by another CSCI
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- All dependencies are documented in the CSCI schedule
- CSCI Schedule updates are due to J. Fontana
- CSCI Schedules are available for viewing:
 - \\Clcs1\Redstone Schedules
- APIs are documented in Interface Description Document (IDD)
 - API calls; Required inputs & outputs are described
 - Where is the template?
- IDD's can be viewed online:
 - \\Clcs1\Redstone IDD (Not available yet)



CSCI Coordination

- ❑ CIT Testing
 - Order of testing
 - CIT resources
 - H/W, Personnel (development, QA, Sys Int)
 - Length of test
- ❑ CIT Coordinator
 - Coordination between CSCI's
 - Scheduling of CSCI testing & resources
 - Dependency tracking

